

VST Effect Plug-ins

CUBASE VST



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Introduction

Cubase VST comes with a number of VST Plug-in effects included. This chapter describes the included effects parameters. For general details about how to assign and set up effects, see the chapter “Installing and using VST plug-ins” in the “Getting into the Details” document.

About VST 2.0

Version 2.0 of the VST plug-in standard allows plug-ins to receive MIDI from the host application (in this case, Cubase VST). Possible uses for this feature include tempo-based delays, MIDI control of pitch-shifters and harmonizers, etc.

- **MIDI Timing information is automatically provided to VST 2.0 plug-ins that “request it”.**

About the “Earlier VST Plug-ins” Folder

Cubase VST 5.0 comes with a completely new set of effect plug-ins. To ensure backwards compatibility with Songs created using previous versions of Cubase, the previous standard set of VST plug-ins is included as well. These are located in the sub-folder “Earlier VST PlugIns” on your effect menus. The parameters for these effects are described in a separate document.

Tempo Sync basics

Several of the new VST Plug-in effects can be synchronized to the Song tempo in Cubase VST. In the control panels for the effect, you normally set up tempo sync by specifying a **base note value** and a **multiplier**. The resulting timing interval is the base note value multiplied with the multiplier value. For example, if you set the base note value to 1/16 (a sixteenth note) and the multiplier to 3, the resulting timing is 3/16. In the case of a delay effect, this means the interval between each delay repeat will be three sixteenth notes.

A note about Stereo Effects

Several of the VST Plug-in effects affect the stereo image, in the form of panning, stereo enhancement or stereo ambience. However, for this to be heard, the output of the effect must be routed to a stereo channel or bus (since otherwise, the output will be mixed to mono). In short: Stereo image effects will not be heard if the effect is used as an Insert Effect for a mono audio channel.

- **If you want to apply e.g. auto-panning to a mono audio channel, there are two ways to do this:**
 - 1) Route the mono audio channel to a Group channel and apply the effect as an Insert Effect for the Group channel.**

Or

 - 2) Use a Send Effect (you would probably want to activate the Pre-fader Send switch and turn down the volume fader for the audio channel).**

Please note that some effects cannot be used as Send Effects.

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Autopole



The Autopole is a filter effect containing two separate filters capable of operating in four different modes, an Envelope Generator and an LFO with four different wave-forms. It also lets you choose between three different Signal Routing modes to control how an incoming signal should be sent through the filters.

The Autopole should be used as an insert effect. If you wish to apply it on several channels at once, you can use it as an insert effect on a group channel and then route the desired channels to the group channel.

The parameters for the different “sections” of the Autopole are the following:

The Filters

Parameter	Description
Filter Mode buttons (LP, BP, HP, Notch)	These buttons let you decide in which mode the Filter should operate: LP: This is a Low-Pass Filter that “filters out” the high frequency content of the incoming signal, according to a certain set threshold level. Only signals below the threshold will pass through. BP: This is a Band-Pass filter that only lets signals around the set frequency through, filtering out all other content. HP: This is a High-Pass Filter that “filters out” the low frequency content of the incoming signal, according to a certain set threshold level. Only signals above the threshold will pass through. Notch: This is a filter that cuts off the signals around the set frequency, leaving all other content unaffected.
Cutoff	This is used for setting the Cutoff frequency, i.e. the threshold at which the filter should “kick in”. The farther to the right you drag the sliders, the higher the frequency.
Resonance	This affects the resonance of the filter. Increasing the resonance gives a more pronounced, lively filter sound. Be wary of extremely high levels of resonance since they might induce unpleasant distortion.

Parameter	Description
LFO Mod	These sliders govern how the filter cut-off frequencies are affected by the LFO (see below). The sliders are “zero-centered”, meaning that in the middle position (zero), no LFO modulation will be applied. By dragging the sliders to the left or right, you cause an increasing amount of modulation to the cut-off frequency. The difference is that if you drag the sliders to the left, the waveform of the LFO is inverted, creating a different effect.
EG Mod	These sliders work in conjunction with the Envelope Generator settings (see below). They control to which extent the cut-off frequencies of the filters should be affected by the Envelope Generator. Drag the sliders to the right if you want to raise the cut-off frequencies and if you want to lower the frequencies, drag the sliders to the left. Leave the sliders in the middle position if you don't want Envelope data to affect the cut-off frequencies.

Signal Routing

By clicking one of the three buttons, you choose how an input *stereo* signal will pass through the filters. The signal flow chart to the left of the buttons indicates the path:

- **Option # 1 will have the signal from each channel pass through both of the filters in series (one after the other).**
 - **With option # 2, the signal from each channel will pass through both of the filters in parallel, and then be mixed at the output.**
 - **Finally, option # 3 causes the signals from both channels to each pass through a separate filter. I.e. the left signal only passes through Filter A, and the right signal only passes through Filter B.**
-
- ☐ **When using the Autopole with mono material, options 1 and 2 are the best choices (sending the signal through the filters in series or in parallel, respectively).**
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Envelope Generator

This section controls how the input signal is converted into Envelope data. This, in its turn, affects the EG Mod sliders in the Filter sections and the Modulation slider in the LFO section:

Parameter	Description
Attack	This regulates how fast the Envelope Generator will respond to an input signal as it rises in sound level. The farther to the left you drag the slider, the faster the response will be.
Release	This governs how fast the Envelope Generator will respond to an input signal as it drops in sound level. The farther to the left you drag the slider, the faster the response will be.

LFO

These are the controls for the Low Frequency Oscillator, used for adding continuous filter movement, wah-wah effects, etc:

Parameter	Description
Frequency	This slider controls the speed of the LFO. The farther to the right you drag the slider, the faster the oscillation will be.
Modulation	Use this slider to control how the speed of the LFO should be modulated by the Envelope Generator (and thus by the level of the input signal). If you drag the slider to the left, a loud input signal will cause the LFO to slow down and if you drag to the right, the LFO will speed up. In the middle position, the speed of the LFO is unaffected.
Waveform Buttons	These buttons are used for choosing a waveform for the LFO. You can choose between Square, Sine, Saw and Triangle.

Output Controls

Parameter	Description
Mix	This controls the balance between the output from the Autopole and the input signal. In the middle position, both signals are equally mixed. The higher you drag the slider, the more dominant the effect will be. Conversely, with lower settings the unaffected original signal will be more pronounced.
Gain	This slider regulates the output level from the Autopole. The higher you drag the slider, the higher the level.
Sync	When this is activated, the LFO will restart in intervals according to the current Song tempo, which is useful for tempo sync and special effects. Click the button to activate sync, and then click in the small display to the right to select at which note values the LFO should be restarted: 1/1, 1/2, 1/4, 1/8 or 1/16. For example, setting this to 1/4 will make the LFO restart on each beat (quarter note) according to the current tempo.

BitCrusher



If you're into lo-fi sound, BitCrusher is the effect for you. It offers the possibility of decimating and truncating the input audio signal by bit reduction, to get a noisy, distorted sound. You can for example make a 24 bit audio signal sound like an 8 or 4 bit signal, or even render it completely garbled and unrecognizable. BitCrusher is usable as an insert effect or a send effect. You can of course also use it as a master effect, should you so wish.

Parameter	Values	Description
Mode	I, II, III, IV	Select one of four operating modes for the BitCrusher. Each mode will produce a different sounding result. Modes I and III are nastier and noisier, while modes II and IV are more subtle.
Depth	0-24	Use this to set the desired bit resolution. A setting of 24 gives the highest audio quality, while a setting of 1 will create mostly noise.
Sample Divider	1-65	This sets the amount by which the audio samples are decimated. At the highest setting (65), nearly all of the information describing the original audio signal will be eliminated, thereby turning the signal into nothing more than unrecognizable noise.
Mix	N/A	This slider regulates the balance between the output from the BitCrusher and the original audio signal. Drag the slider upwards for a more dominant effect, and drag it downwards if you want the original signal to be more prominent.
Gain	N/A	Governs the output level from the BitCrusher. Drag the slider upwards to increase the level.

DaTube



This effect emulates the characteristic warm, lush sound of a tube amplifier. It is usable both as an insert effect and a send effect:

Parameter	Values	Description
Drive	0 to +10	Regulates the pre-gain of the “amplifier”. Use high values if you want an overdriven sound just on the verge of distortion.
Balance	-10 to +10	This controls the balance between the signal processed by the Drive parameter and the dry input signal. For maximum drive effect, set this to its highest value.
Volume	0 to +10	Adjusts the post-gain, or output level, of the “amplifier”.

MIDI Comb



This is a comb filter, which can be described as one or several very short delays with high feedback, causing resonating peaks at certain frequencies. To operate, the MIDI Comb needs both audio and MIDI input. While the MIDI Comb is used as an insert effect on an audio channel, the signals that actually trigger it are the ones sent from a MIDI track.

Setting Up

The MIDI Comb requires both an audio signal and a MIDI input to function.

To set it up, proceed as follows:

1. Select the audio to be affected by the MIDI Comb.

This can be audio material from any VST Audio Track, or even a live audio input routed to a VST Audio Track (provided you have a low latency audio card). If a live audio input is used, monitoring must be set to input (the "In" buttons in the Inspector must be lit).

2. Select the MIDI Comb as an Insert effect for the Audio channel.

Click the Edit button to open the MIDI Comb panel.

3. Select a MIDI Track.

This can be an empty MIDI Track, or a MIDI Track containing data, it doesn't matter. However, if you wish to play the MIDI Comb in real-time – as opposed to having a recorded Part playing it – the Track has to be selected for the effect to receive the MIDI output.

4. Click in the Output column for the MIDI Track.

The Output pop-up menu appears, with the MIDI Comb as one of the items.

5. Select the MIDI Comb from the Output pop-up menu.

The MIDI Output from the Track is now routed to the MIDI Comb.

What to do next depends on whether you are using live or recorded audio and whether you are using real-time or recorded MIDI. We will assume for the purposes of this manual that you are using recorded audio, and play the MIDI in real-time.

Make sure the MIDI Track is selected and start playback.

6. Now play a few notes on your MIDI keyboard.

As you can hear, the audio track material is affected by what you play on your MIDI keyboard.

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The MIDI Comb is polyphonic with up to 8 voices, i.e. you can play up to 8 MIDI notes at once and each note will produce a separate resonating tone.

You can now make settings for the MIDI Comb using the following parameters:

Amp e.g.

Parameter	Description
Atk	Use this slider to set the attack time of the resonant tones created by the comb filter – i.e how soon they will start to resonate after being triggered by MIDI notes. The farther down you drag the slider, the shorter the attack.
Rel	This controls the release time of the resonant tones created by the comb filter – i.e. how soon the sound will be cut off. The farther up you drag the slider, the longer the sound will resonate.

Key Velocity Modifiers

Parameter	Description
Level	This determines how the filter responds to MIDI notes with different velocity values. At the middle setting, all tones produced by the filter will sound at an equal level regardless of the velocity values of the MIDI notes that trigger them. If you move the slider upwards, MIDI notes with higher velocity values will produce louder comb filter tones. Conversely, moving the slider downwards causes the level of the filter tones to increase with lower MIDI note velocities.
Res	This affects the resonance (feedback) of the produced tones depending on the velocity value of the MIDI notes that trigger them. In the middle position, the resonance is unaffected regardless of velocity. By dragging the slider upwards, tones triggered by MIDI notes with a high velocity value will get increased resonance. By dragging the slider downwards, tones triggered by MIDI notes with a low velocity value will become more resonant.
HPF & LPF	The MIDI Comb features both a High-Pass filter and a Low-Pass filter (see “Filters” below) that can be used for “filtering out” certain frequencies of the resonating tones according to a certain set filter cutoff frequency. These two sliders determine how much the High-Pass and Low-Pass filters should be affected by the MIDI note velocity values. Positive values cause higher velocities to increase the effect of the filters, negative values cause higher velocities to decrease the effect.

Feedback

Parameter	Description
Feedback	This slider governs the amount of effect output from the MIDI Comb that is fed back in again. The more effect feedback, the more complex the sound. Drag the slider upwards to increase feedback.

Filters

Parameter	Description
LP Cut-off	Use this to set the frequency threshold of the Low-Pass Filter. This filter cuts off all of the high frequencies relative to the set threshold. The farther up you drag the slider, the more of the high frequencies will be allowed to pass through.
HP Cut-off	Use this to set the frequency threshold of the High-Pass Filter. This filter cuts off all of the low frequencies relative to the set threshold. The farther down you drag the slider, the more of the low frequencies will be allowed to pass through.

Output

Parameter	Description
Mix	Use this to set the balance between the original, unprocessed signal and the signal affected by the MIDI Comb. In the middle position, they are equally mixed. Drag the slider upwards for a more dominant effect sound and vice versa.
Gain	This controls the output level from the MIDI Comb. Drag the slider upwards to increase the level.

MIDI Gate



Gating, in its fundamental form, silences audio signals below a certain set threshold level. I.e. when a signal rises above the set level, the Gate opens to let the signal through while signals below the set level are cut off. MIDI Gate however, is a Gate effect that is not triggered by threshold levels, but instead by MIDI notes. Hence it needs both audio and MIDI data to function.

Setting Up

The MIDI Gate requires both an audio signal and a MIDI input to function.

To set it up, proceed as follows:

1. Select the audio to be affected by the MIDI Gate.

This can be audio material from any VST Audio Track, or even a live audio input routed to a VST Audio Track (provided you have a low latency audio card). If a live audio input is used, monitoring must be set to input (the "In" buttons in the Inspector must be lit).

2. Select the MIDI Gate as an Insert effect for the Audio channel.

Click the Edit button to open the MIDI Gate panel.

3. Select a MIDI Track to control the MIDI Gate.

This can be an empty MIDI Track, or a MIDI Track containing data, it doesn't matter. However, if you wish to play the MIDI Gate in real-time – as opposed to having a recorded Part playing it – the Track has to be selected for the effect to receive the MIDI output.

4. Click in the Output column for the MIDI Track.

The Output pop-up menu appears, with the MIDI Gate as one of the items.

5. Select the MIDI Gate from the Output pop-up menu.

The MIDI Output from the Track is now routed to the MIDI Gate.

What to do next depends on whether you are using live or recorded audio and whether you are using real-time or recorded MIDI. We will assume for the purposes of this manual that you are using recorded audio, and play the MIDI in real-time.

Make sure the MIDI Track is selected and start playback.

6. Now play a few notes on your MIDI keyboard.

As you can hear, the audio track material is affected by what you play on your MIDI keyboard.

You can now make settings for the MIDI Gate using the following parameters:

Parameter	Values	Description
Attack	0 - 500	This is used for determining how long it should take for the Gate to open after receiving a signal that triggers it.
Hold	0 - 3.000	Regulates how long the Gate remains open after a Note On or Note Off message (see Hold Mode below).
Release	0 - 3.000	This determines how long it takes for the Gate to close (in addition to the value set with the Hold-parameter).
Note To Attack	-100 -<Off>- +100	The value you specify here determines how and to which extent the pitch of the MIDI notes should affect the Attack. If this is set to a positive value, the Attack time will increase with higher note velocities. Negative values will give shorter Attack times with higher velocities. If you do not wish to use this parameter, set it in the <Off> position.
Note To Release	-100 -<Off>- +100	The value you specify here determines how and to which extent the pitch of the MIDI notes should affect the Release. Positive values will increase the Release time and negative values will decrease the Release time. If you do not wish to use this parameter, set it in the <Off> position.
Velocity To VCA	0 - 127	This controls to which extent the velocity values of the MIDI notes determine the output volume. A value of 127 means that the volume is controlled entirely by the velocity values, while a value of 0 means that velocities will have no effect on the volume.
Hold Mode	Note-On/Note-Off	Use this switch to set the Hold Mode. In Note-On mode, the Gate will only remain open for the time set with the Hold and Release parameters, regardless of the length of the MIDI note that triggered the Gate. In Note-Off mode on the other hand, the Gate will remain open for as long as the MIDI note plays, and then apply the Release parameter. In this case, the Hold parameter has no effect.

Mysterizer



The Mysterizer is a multi-effect plug-in with a unique hands-on user interface. It can be used as an insert effect or a send effect, and allows you to choose between eight different effects. For each effect, you can control two parameters by clicking and dragging in the display, allowing for continuous real-time effect manipulation, subtle sweeping changes or weird, wild mutations.

Here's how to use the Mysterizer:

- 1. Play back some audio and route the audio channel through the Mysterizer (either as an insert or a send effect).**
- 2. Open the Mysterizer effect control panel and click the Prog Select field to the right to select the desired effect.**
Each time you click, the next effect is selected. For a list of the effects, see below.
- 3. When you have selected an effect you want to use, the two text fields to the left show you which parameters are controlled on the X-axis and Y-axis respectively.**
In the figure above, the Ring Mod effect is selected, with Amount controlled on the X-axis and Frequency on the Y-axis.
- 4. Click in the display and drag the hair cursor to change the parameter settings.**
The X-axis goes from left to right and the Y-axis goes from top to bottom, which means that the "zero setting" for both axes is in the upper left corner of the display.
- 5. Experiment!**

The Rate and Overshoot knobs

When you move the hair cursor, you will see how the small white dot moves to follow your adjustments. This represents the actual parameter settings. The Rate and Overshoot controls at the bottom of the window control how quickly and accurately the white dot follows your movements – in other words how your mouse movements are “interpreted” by the effect.

- **The Rate knobs determine how fast the Mysterizer will respond when you move the hair cursor to a new position.**
You can make independent settings for the X- and Y-axis.
- **The Overshoot knobs determine how far from the “target position” the white dot will be allowed to stray along the corresponding axis when moving the hair cursor.**
Moderate settings can give a more natural feel when a parameter is changed. Maximum Overshoot settings (turning the knob all the way to the right) will cause constant movement back and forth along the corresponding axis relative to the target position, because the white dot will never “reach the target” and come to rest. This can create an undulating, LFO-like special effect, the speed and range of which can be controlled with the corresponding Rate knob.

The Effects

The following effects are available:

Effect	Description	X-axis param.	Y-axis param.
Ring Modulator	An effect with which the incoming audio is ring modulated by an internal, variable frequency oscillator, thereby producing new harmonics.	Amount of effect	Frequency of the built-in oscillator
Comb Delay	A delay with high feedback, causing resonating peaks at certain frequencies.	Feedback amount	Manual delay time (pitch) adjustment
Mono Delay	A monaural delay.	Delay feedback	Delay time
Stereo Delay	A stereo delay with which the repeats are heard in both the left and right channels	Delay feedback	Delay time
Low-Pass Filter (LP)	A filter that cuts off high frequencies according to a set frequency threshold. Only signals below the cut-off frequency will be heard.	Filter resonance	Filter cutoff frequency
High-Pass Filter (HP)	A filter that cuts off low frequencies according to a set frequency threshold. Only signals above the cut-off frequency will be heard.	Filter resonance	Filter cutoff frequency
Band-Pass Filter (BP)	A filter that cuts off all frequencies except those around the set cut-off frequency.	Filter resonance	Filter cutoff frequency
Distortion	A standard distortion effect.	Drive amount	Tone control

PhatSync



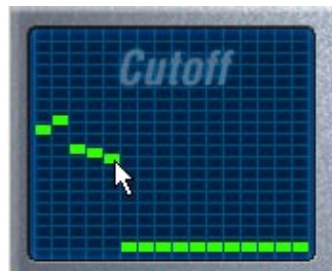
PhatSync is a pattern-controlled multimode filter that can create rhythmic, pulsating filter effects.

General Operation

PhatSync can produce two simultaneous 16-step patterns for the filter cutoff and resonance parameters, synced to the sequencer tempo.

Setting Step Values

- **Setting step values is done by clicking in the pattern grid windows.** Individual step entries can be freely dragged up or down the vertical axis, or directly set by clicking in an empty grid box. By click-dragging left or right consecutive step entries will be set to the pointer position.



Setting filter cutoff values in the grid window.

- **The horizontal axis show the pattern steps 1-16 from left to right, and the vertical axis determines the (relative) filter cutoff frequency and resonance setting.** The higher up on the vertical axis a step value is entered, the higher the relative filter cutoff frequency or filter resonance setting.
- **By starting playback and editing the patterns for the cutoff and resonance parameters, you can hear how your filter patterns affect the sound source connected to PhatSync directly.**

Selecting New Patterns

- **Created patterns are saved with the song, and up to 8 different Cutoff and Resonance patterns can be saved internally.**
Both the Cutoff and Resonance patterns are saved together in the 8 Pattern memories.
- **To select new patterns you use the Pattern Selector.**
New patterns are all set to the same step value by default.



Pattern Selector.

Using Pattern Copy and Paste to create variations

You can use the Copy and Paste buttons below the Pattern selector to copy a pattern to another Pattern memory location, which is useful for creating variations on a pattern.

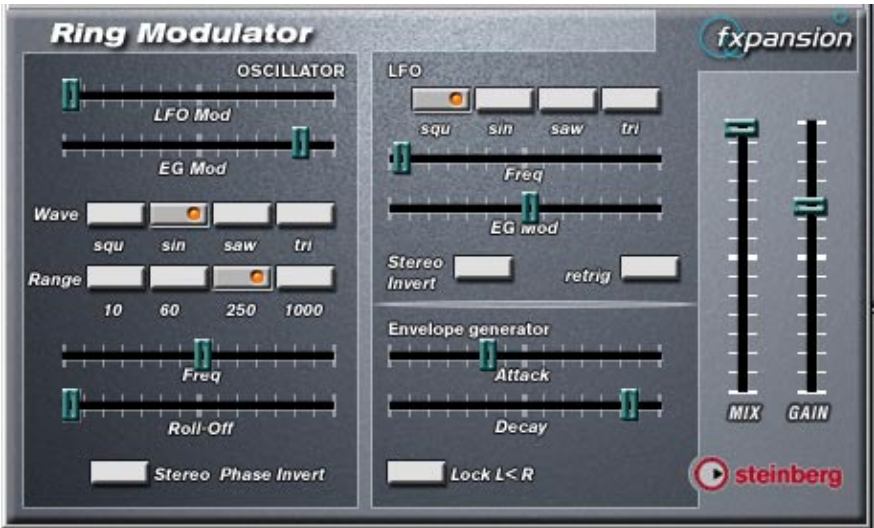
- **Click the Copy button with the pattern you wish to copy selected, then select another Pattern memory location, and click Paste.**
The pattern is copied to the new location, and can now be edited to create variations using the original pattern as a starting point.

PhatSync Parameters:

Parameter/Value	Description
Base Cutoff	This sets the base filter cutoff frequency. Cutoff values set in the Cutoff Grid windows are values <i>relative</i> to the Base Cutoff value.
Base Resonance	This sets the base filter resonance. Resonance values set in the Resonance Grid windows are values <i>relative</i> to the Base Resonance value. Note that very high Base Resonance settings can produce loud ringing effects at certain frequencies.
Glide	This will apply glide between the pattern step values, causing values to change more smoothly.
Filter Mode (LP, BP, HP)	This selects between low-pass (LP), bandpass (BP) or high-pass (HP) filter modes.
Sync (1/32, 1/16, 1/8, 1/4)	This sets the pattern beat resolution, i.e. what note values the pattern will play in relation to the tempo.
Mix	Adjusts the mix between dry and processed signal.
Gain	Sets the overall volume.

- ❑ **All parameters can be automated as described in the Getting into the Details chapter “VST Instruments”.**

Ring Modulator



The Ring Modulator can produce complex, bell-like enharmonic sounds. Ring Modulators work by multiplying two audio signals together. The ring modulated output contains added frequencies generated by the sum of, and the difference between, the frequencies of the two signals.

The Ring Modulator has a built-in oscillator that is multiplied with the input signal to produce the effect.

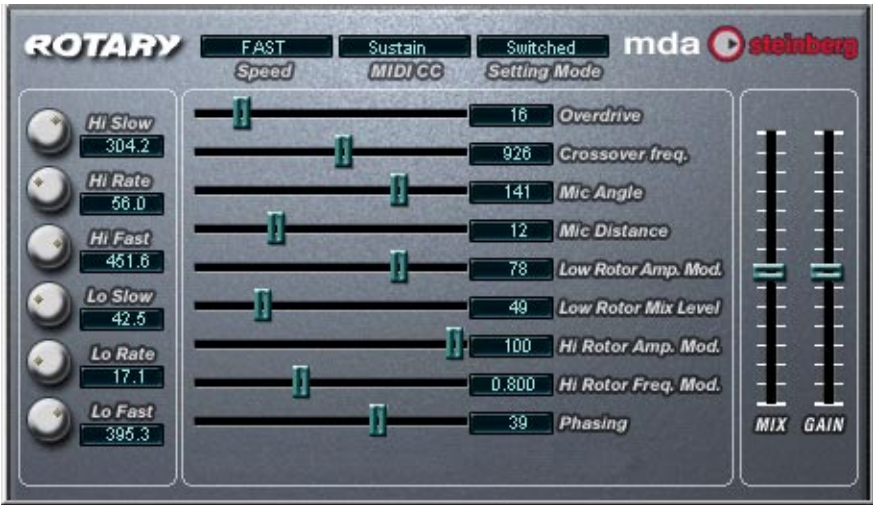
Parameters:

Parameter	Description
Oscillator LFO Mod	LFO Mod controls how much the oscillator frequency is affected by the LFO.
Oscillator EG Mod	EG Mod controls how much the oscillator frequency is affected by the Envelope (which is triggered by the input signal). Positive and negative values can be set, with center position representing no modulation. Left of center, a loud input signal will decrease the oscillator pitch, whereas right of center the oscillator pitch will increase when fed a loud input.
Oscillator Wave	Selects the oscillator waveform; square, sine, saw or triangle.
Oscillator Range	Determines the frequency range of the oscillator in Hz.
Freq	Sets the oscillator frequency +/- 2 octaves within the selected range.
Roll-Off	Cuts high frequencies in the oscillator waveform, to soften the overall sound. This is best used when harmonically rich waveforms are selected (e.g. square or saw).
Stereo Phase Invert	Flips the phase of the oscillator waveform on the right channel.
LFO Waveform	Selects the LFO waveform: square, sine, saw or triangle.
LFO Freq	Sets the LFO Speed.
EG Mod	Controls how much the input signal level – via the Envelope Generator – affects the LFO Speed. Positive and negative values can be set, with center position representing no modulation. Left of center, a loud input signal will slow down the LFO, whereas right of center a loud input signal will speed it up.
Stereo Invert	This inverts the LFO waveform for the right channel of the oscillator, which produces a wider stereo perspective for the modulation.

Parameter	Description
Retrig	Causes the LFO cycle to reset itself at the start of each bar during playback, which can be used for certain LFO effects synced to the tempo.
Envelope Generator	<p>The Envelope Generator section controls how the input signal is converted to envelope data, which can then be used to control oscillator pitch and LFO speed. It has two main controls:</p> <ul style="list-style-type: none"> • Attack sets how fast the EG output level rises in response to a rising input signal. • Decay controls how fast the EG output level falls in response to a falling input signal.
Lock L<R	When this switch is enabled, the L and R input signals are merged, and produce the same EG output level for both oscillator channels. When disabled, each channel has its own EG, which affect the two channels of the oscillator independently.
Mix	Adjusts the mix between dry and processed signal.
Gain	Sets the overall volume.

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- **All parameters can be automated as described in the Getting into the Details chapter “VST Instruments”.**
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Rotary



The Rotary plug-in simulates the classic effect of a rotary speaker. A rotary speaker cabinet features variable speed rotating speakers to produce a swirling chorus effect, commonly used with organs. Rotary features all the parameters associated with the real thing. The included presets provide good starting points for further tweaking of the numerous parameters.

The parameters are as follows:

Parameter	Values	Description
Speed	STOP/SLOW/FAST	This controls the speed of the Rotary.
MIDI CC	Mod Wheel/Pitch Bend/Sustain Pedal/ Volume/Expression/ Velocity/CC# 2 to 14	Selects the MIDI Continuous Controller for the Speed parameter. See page 22 .
Setting Mode	Switched/Variable	Selects whether the SLOW/FAST speed setting is a switch, or a variable control. When switch mode is selected, and Pitch Bend is the controller, the speed will switch with an up or down flick of the bender. Other controllers switch at 64.
Overdrive	0-100	Applies a soft overdrive or distortion.
Crossover frequency	200-3000Hz	Sets the crossover frequency between the low and high frequency loudspeakers.
Mic Angle	0-180 degrees	Sets the simulated microphone angle. 0=mono, 180=one mic on each side.
Mic Distance	1-36 Inches	Sets the simulated microphone distance from the speaker.
Low Rotor Amp. Mod.	0-100	Adjusts the amplitude modulation depth.
Low Rotor Mix Level	0-100	Adjusts the overall bass level.
Hi Rotor Amp. Mod.	0-100	High rotor amplitude modulation.
Hi Rotor Freq. Mod.	0-100	High rotor frequency modulation.
Phasing	-100 to 100	Adjusts the amount of phasing in the sound of the high rotor.

Parameter	Values	Description
Hi Slow	0.0-720 rpm	Fine adjustment of the high rotor SLOW speed.
Hi Rate	0.0-720 rpm/sec	Fine adjustment of the high rotor acceleration time.
Hi Fast	0.0-720 rpm	Fine adjustment of the high rotor FAST speed
Lo Slow	0.0-720 rpm	Fine adjustment of the low rotor SLOW speed.
Lo Rate	0.0-720 rpm/sec	Fine adjustment of the low rotor acceleration time.
Lo Fast	0.0-720 rpm	Fine adjustment of the low rotor FAST speed
Gain		Adjusts the overall output level.
Mix		Adjusts the mix between dry or processed signal.

Directing MIDI to the Rotary

For real-time MIDI control of the Speed parameter, MIDI must be directed to the Rotary.

- **Whenever the Rotary has been selected as a Send or Insert effect, it will be available in the Out column pop-up menu for MIDI Tracks.**

If Rotary is selected in the Out column, MIDI will be directed to the plug-in from the selected Track.

- **If you are playing a VST instrument routed to the Rotary and wish to simultaneously record both the note data and controller data sent to the Rotary, Multirecord – Layer mode must be used.**

Two MIDI Tracks must be record enabled, with one routed to the VST Instrument and the other routed to the Rotary. Multirecord is explained in the Getting into the Details chapter “Stereo, Multi Channel and Multi Track Recording”.

- **All parameters can be automated as described in the Getting into the Details chapter “VST Instruments”.**

subBASS



The subBASS is a bass synthesizer, that can generate low frequency content and track the pitch from the audio material for deep, sub-sonic bass effects.

The parameters are as follows:

Parameter	Values	Description
Mode	Boost/Divide/Trigger	<ul style="list-style-type: none">• Boost produces a warm bass boost to the signal.• Divide generates a pitch tracking signal an octave below the input signal.• Trigger adds a decaying “boom” produced by an oscillator, typically triggered by a kick drum.
Tune	20-500Hz	This sets the maximum frequency to be affected. Set as low as possible to avoid unwanted distortion. In “Trigger” mode this sets the oscillator frequency.
Drive	0-100	<ul style="list-style-type: none">• In Boost mode, raising the Drive parameter adds “crunch” to the effect.• In Divide mode, increasing Drive to 50% overdrives the sub-octave signal producing a square wave, and increasing Drive to 100% produces a square wave one octave above (i.e. at the original input frequency).• In Trigger mode this changes the tone of the oscillator, with higher settings producing a thinner sound.
Tone	0-100	This is a low-pass filter that can be used to change the brightness of the signal. In “Trigger” mode this sets the decay time of the generated oscillator boom.
Threshold	-80dB to 0dB	This sets the threshold for the effect. Increase to “gate” the effect and to cut out unwanted background rumble.
Dry Level	0-100	Sets the level of the original, unprocessed signal.
FX Level	0-100	Sets the level of the processed signal.

Vocoder



The Vocoder can apply sound/voice characteristics taken from one signal source called the “Modulator” and apply this to another source, called the “Carrier”. A typical application of a vocoder is to use a voice as a modulator and an instrument as a carrier, making the instrument “talk”. A vocoder works by dividing the source signal (modulator) into a number of frequency bands. The audio attributes of these frequency bands can then be used to modulate the carrier.

The Vocoder has a built-in carrier, which is basically a simple polyphonic synthesizer, with a sound optimized to respond well to the modulator input.

Setting Up

The Vocoder is set up slightly differently than other VST plug-in effects. This is because the Vocoder requires both an audio signal (as the modulator source) and a MIDI input (to play the carrier) to function.

To set up for use, proceed as follows:

1. Select a source for the modulator.

The modulator source can be audio material from any VST Audio Track, or even a live audio input routed to a VST Audio Track (provided you have a low latency audio card). If a live audio input is used, monitoring must be set to input (the “In” buttons in the Inspector must be lit).

- **Good modulator source material are talking or singing voices or percussive sounds like drum loops for example.**

Static pads or soft ambient material are generally less appropriate for use as modulators, but there are no hard and fast rules as to what could be used as a modulator source.

2. Select the Vocoder as an Insert effect for the Audio channel with the Modulator signal.

Click the Edit button to open the Vocoder panel.

3. Select a MIDI Track.

This can be an empty MIDI Track, or a MIDI Track containing data, it doesn’t matter. However, if you wish to play the vocoder in real-time – as opposed to having a recorded Part playing it – the Track has to be selected for the vocoder to receive the MIDI output.

4. Click in the Output column for the MIDI Track.

The Output pop-up menu appears, with the Vocoder as one of the items.

5. Select the Vocoder from the Output pop-up menu.

The MIDI Output from the Track is now routed to the vocoder.

That concludes the setting up and you are now ready to start vocoding!

What you do next depends on whether you are using live or recorded audio as the modulator source and whether you are using real-time or recorded MIDI as the carrier input. We will assume for the purposes of this manual that you are using recorded audio as the modulator, and play the carrier in real-time.

Make sure the MIDI Track is selected and start playback.

6. Now play a few notes on your MIDI keyboard.

As you can hear, the audio track material, or rather its formant characteristics, is now applied to the Vocoder’s built-in sound source!

Vocoder Synth Parameters

The built-in synthesizer is always the carrier, i.e. it is the sound of this instrument that the modulator source is applied to. The synth is up to 8 voice polyphonic, and features 2 oscillators per voice. The synth has the following parameters:

Parameter	Values	Description
Max Poly	1-8	This sets the number of voices for the synth.
Fine Tune	-100/+100 Cent	Tunes the oscillators in cent (100th of a semitone) steps.
Pitch Bend	1-12 Semitones	Sets the up/down range of the Pitch Bend in semitone steps.
Noise	0-100	Adds white noise to the sound.
NoiseMod	0-100	This makes the oscillators modulate the noise level. This gives the noise a rasping sound, turning “sss” into “zzz”.
P.Drift	0-100	Adds random pitch variation to the oscillators.
P.Glide	0-100	This makes the pitch glide between notes played. The parameter controls the time it takes for the pitch to glide from one note to the next.
P.Bright	0-100	This is a low-pass filter that can be used to soften the tone of the oscillators. It does not affect the white noise generator.
P.Detune	-12.00 to 0.00.	Allows you to detune one of the oscillators in cent steps.
LFO Rate	1-23Hz	Controls the LFO rate (for vibrato).
Vibrato	0-100	Adds vibrato to the oscillators. This can also be controlled by using the Mod Wheel.

Vocoder Parameters

The Vocoder parameters govern the general sound quality of the vocoded sound.

Parameter	Values	Description
NumBands	2-24	This governs how many frequency bands the modulator signal is divided into. Fewer bands will provide a thinner more resonant sound, whereas using more bands will make the sound fuller and more intelligible.
Bandwidth	0-100	This sets the bandwidth for the frequency bands, which affects the overall timbre. Very narrow bandwidth settings will produce a thin, whistle-like sound.
Min/Max Freq	40-8000Hz	These parameters set the minimum and maximum frequency limits for the vocoder, respectively.
Log/Lin	0-100	Log/Lin controls how the frequency bands are spaced between the min and max frequencies. Log = equal spacing in octaves, Lin = equal spacing in Hz. This affects the basic timbre of the vocoder.
Env.Speed	10-19699ms/HOLD	This determines the attack and release times of the vocoder envelope. Fast settings will cause the modulator signal to trigger the vocoder instantly, longer settings will gradually increase the attack/release times, providing a more subtle vocoder effect. If set to "HOLD" the modulator is "frozen", and doesn't affect the carrier synth at all.
High Thru	0-100	This lets through high frequencies around the "S" frequency from the original input signal while notes are played.
Talk Thru	0-100	Adjusts the level of the original input signal passed to the vocoder output while notes are played.
Gap Thru	0-100	Gap Thru sets the level of the original input signal that is passed to the vocoder output when no MIDI notes are being played. This lets you apply the vocoder to a vocal track adding vocoded parts just where you want them.
Output	1-23	This controls the output level of the vocoder.
Emphasis	0-100	This is a high-pass filter, gradually cutting lower frequencies while letting high frequencies pass.

About the Dynamics plug-in

Dynamics is a plug-in version of the VST Dynamics Panel that is available in the Channel Settings window. The reason for having a separate plug-in version is to make dynamic processing available to Group, ReWire and VST Instrument channels (which cannot use the VST Dynamics panel in the Channel Settings). In addition, it is also possible to use the Dynamic plug-in as a Master effect. Dynamics features three separate processors: AutoGate, Compress and Limit, covering the most common dynamic processing functions.

- ❑ **See the chapter “Mixing Audio and using Effects” in the Getting into the Details documentation for a description of the available parameters.**
- **Two additional dynamic processors are available in the VST Dynamics panel: AutoLevel and SoftClip.**
For technical reasons, these are not available in the Dynamics plug-in.
- **One additional feature – “Routing” – is available in the Dynamics plug-in, which is not available in VST Dynamics panel. This is described below.**

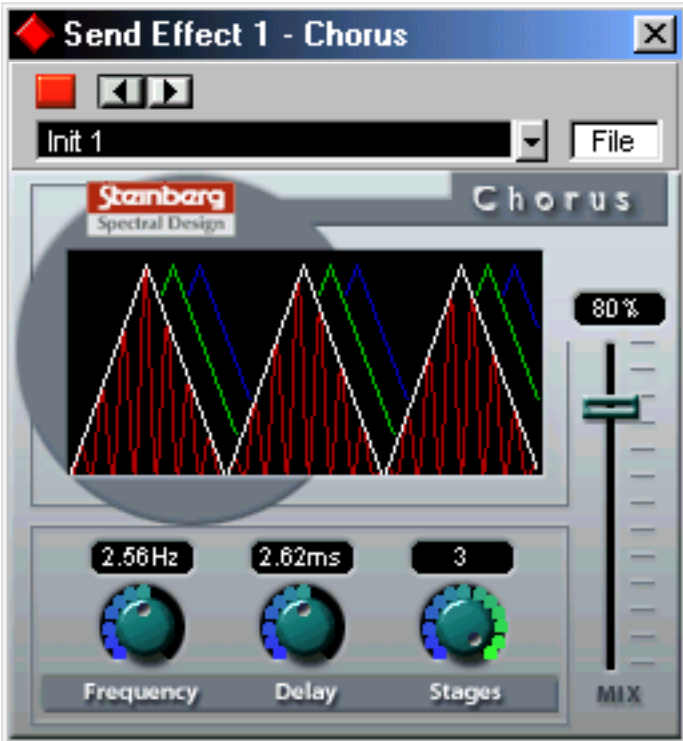
Routing section



In the Routing section you can set the signal flow order for the three processors. Changing the order of the processors can produce different results, and the available options allow you to quickly compare what works best for a given situation. Beside each processor label, there is a number. These numbers represent the signal flow options shown in the Routing section. There are three routing options:

- 1-2-3 (Compress-Gate-Limit)
- 2-1-3 (Gate-Compress-Limit)
- 1-3-2 (Compress-Limit-Gate)

Chorus



The Chorus plug-in adds a short delay to the signal, and pitch modulates the delayed signal to produce a “doubling” effect. The parameters are as follows:

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Chorus is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Frequency	0-5Hz	This sets the modulation rate.
Delay	0-5ms	This controls the depth of the Chorus effect.
Stages	1-3	This adds one or two more delay taps, producing a thicker, multi-layered chorus effect.

DoubleDelay



This effect provides two separate tempo-based delays. Cubase VST automatically provides the plug-in with the current Song Tempo. The parameters are as follows:

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If DoubleDelay is used as a send effect, this should be set to maximum (100%) as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up 1	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	This pop-up menu (in the upper left corner of the graphic display) is where you specify the base note value for the first delay unit. If "No Sync" is selected, no delay effect will be produced.
Tempo Sync pop-up 2	As above	This pop-up menu (in the lower left corner of the graphic display) is where you specify the base note value for the second delay unit.
Feedback	0-100%	This sets the number of repeats for both delays.
TMP Sync1	x1 to x10	The note value multiplier for the first delay unit. See page 3 .
TMP Sync2	x1 to x10	As above, but for the second delay unit.
Pan1	-100 to 100%	This sets the stereo position for the first delay.
Pan2	-100 to 100%	This sets the stereo position for the second delay.

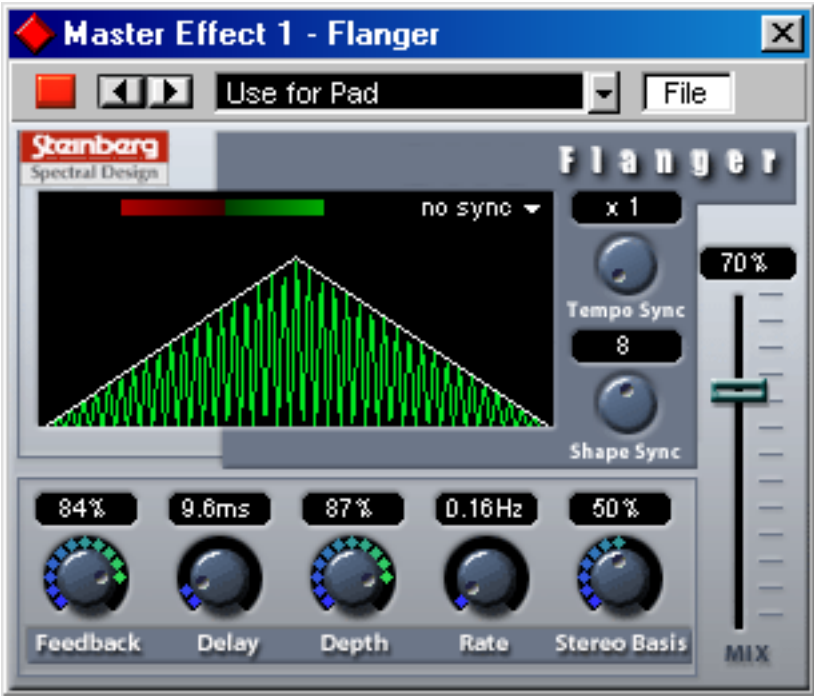
ModDelay



This is a delay effect that can either be tempo-based or use freely specified delay time settings. The delay repeats can also be modulated. The parameters are as follows:

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If ModDelay is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Feedback	0-100%	This sets the number of repeats for the delay.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	Clicking the value field above the Tmp Sync knob opens the Tempo Sync pop-up. This is where you specify the base note value for the delay. If you select “No Sync”, the delay time can be set freely with the Time knob, without sync to tempo.
Tmp Sync knob	x1 to x10	This is the note value multiplier for the delay when tempo sync is used. See page 3 .
Time	0-5000ms	This sets the delay time when “No Sync” is selected on the Tempo Sync pop-up, i.e. tempo sync is off.
DelayMod	0-100%	This controls the pitch modulation rate for the delay effect.

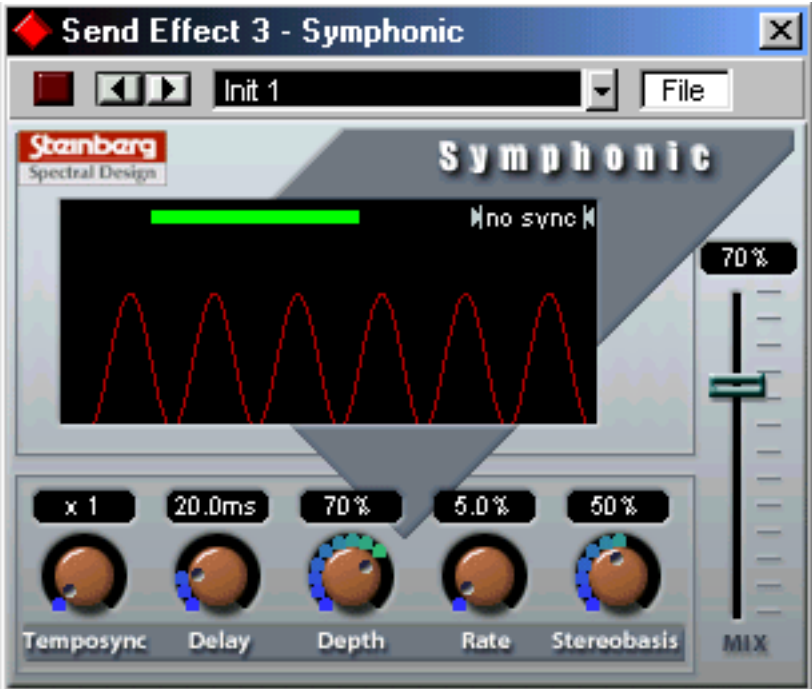
Flanger



Flanger is a classic flanger effect with stereo enhancement. The Parameters are as follows:

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Flanger is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	This pop-up menu (in the upper right corner of the graphic display) is where you specify the base note value for tempo syncing the flanger sweep. If you select “No Sync”, the sweep rate can be set freely with the Time knob, without sync to tempo.
Tempo Sync knob	x1 to x10	This is the note value multiplier for the flanger sweep when tempo sync is used. See page 3 .
Shape Sync knob	1-16	This changes the shape of the modulating waveform, altering the character of the flanger sweep.
Feedback	0-100%	This determines the character of the flange effect. Higher settings produce a more “metallic” sounding sweep.
Rate	0-5Hz	This sets the rate of the modulation sweep when “No Sync” is selected, i.e. when tempo sync is off.
Depth	0-100%	This sets the depth of the modulation sweep.
Delay	0-100ms	This parameter affects the frequency range of the modulation sweep, by adjusting the initial delay time.
Stereo Basis	0-100%	This sets the stereo width of the effect. 0% is mono, 50% original stereo, and 100% maximum stereo enhancement.

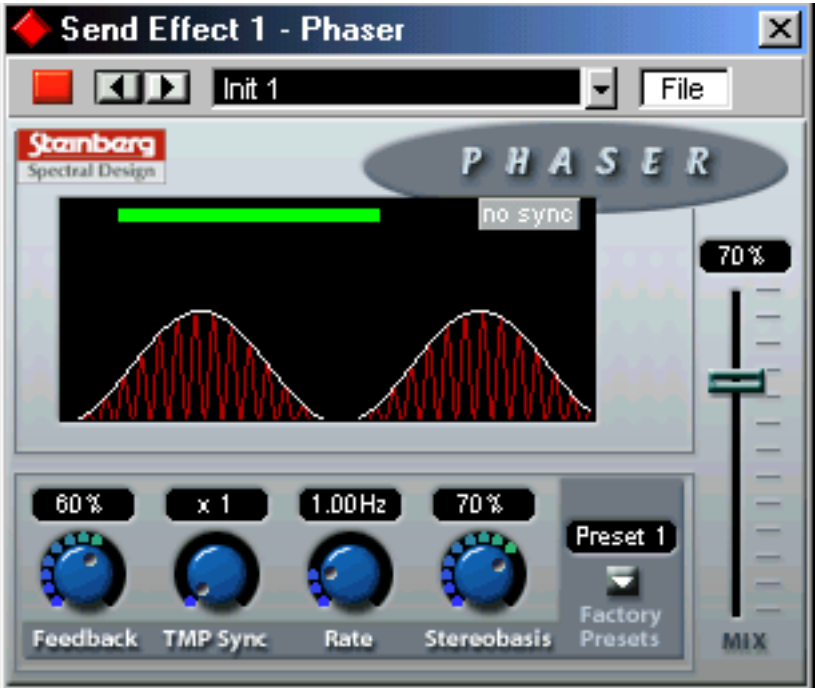
Symphonic



The Symphonic plug-in combines a stereo enhancer, an auto-panner synced to tempo and a chorus-type effect. For best results, apply the Symphonic effect to stereo signals.

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Symphonic is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	This pop-up menu (in the upper right corner of the graphic display) is where you specify the base note value for tempo syncing the panning effect. Selecting “No Sync” turns off the auto-panning, allowing you to use Symphonic as a chorus and/or stereo enhancer only.
Tempo Sync knob	x1 to x10	This is the note value multiplier, determining the timing of the auto-panning. See page 3 .
Delay	0-100 ms	This determines the delay time and thus the character of the chorus effect, if activated.
Depth	0-100%	This controls the depth of the chorus effect. If you only want to use Symphonic as an auto-panner or a stereo enhancer, set this to 0%.
Rate	0-100%	This sets the modulation rate for the chorus effect, if activated.
Stereo Basis	0-100%	When the Auto-panner is activated, this sets the stereo width of the panning. When the Auto-panner is deactivated (“No Sync” is selected), this determines the depth of the Stereo Enhancer effect. 0% is mono, 50% original stereo, and 100% maximum stereo enhancement.

Phaser



The Phaser plug-in produces the classic “swooshing” sound that characterizes phasing. It works by shifting the phase of the signal and adding it back to the original signal, causing partial cancellation of the frequency spectrum.

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If the Phaser is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	This pop-up menu (in the upper right corner of the graphic display) is where you specify the base note value for tempo syncing the Phaser sweep. If you select “No Sync”, the sweep rate can be set freely with the Time knob, without sync to tempo.
Feedback	0-100%	This sets the amount of Feedback. A higher value produces a more pronounced effect.
TMP Sync knob	x1 to x10	This is the note value multiplier for the Phaser sweep when tempo sync is used. See page 3 .
Rate	0-6Hz	This sets the rate of the Phaser sweep when “No Sync” is selected, i.e. when tempo sync is off.
Stereo Basis	0-100%	This sets the stereo width of the effect. 0% is mono, 50% original stereo, and 100% maximum stereo enhancement.

Distortion



The Distortion effect plug-in is capable of producing anything from a soft “crunch” to all-out distortion. There is a selection of factory presets available. Note that these presets are not stored parameter settings, but different basic distortion algorithms. The basic characters of the distortion preset “models” are indicated by their names. The parameters are as follows:

Parameter	Values	Description
Input	-24dB to 0dB	Sets the Input level.
Output	-24dB to 0dB	Sets the Output level. As distortion generates harmonics, it increases the level of the processed signal. You can use the Output fader to compensate for the level increase.
Shapes	Linear, Non-linear 1, Non-linear 2	The Shape parameter determines how much the input signal is affected by the distortion effect. Non-linear 2 will produce the strongest distortion.
Contour	0-100%	This is a selective low-pass filter, altering the tonal quality of the distortion.
Drive	0-100%	Governs the amount of distortion.
Factory Presets	Soft, Crunchy, Dirty, Wracky, Evil	Select one of five presets, which can be used as they are, or as a basis for further “tweaking”.

Overdrive



Overdrive is a distortion-type effect, emulating the sound of a guitar amplifier. There is a selection of factory presets available. Note that these are not stored parameter settings, but different basic overdrive algorithms, the characters of which are indicated by their names. The parameters are as follows:

Parameter	Values	Description
Input	--15 to +15dB	Sets the Input level.
Output	-15 to +15dB	Sets the Output level. As overdrive generates harmonics, it increases the level of the processed signal. You can use the Output fader to compensate for the level increase.
Speaker simulation	On/Off	Simulates the sound of a speaker cabinet.
Factory Presets	Warm, Chordy, Magic OD, Fat Drive, Woody, Bluesy	Select one of six presets, which can be used as they are, or as a basis for further "tweaking".
Bass	-15 to +15dB	Tone control for the low frequencies, allowing a 15 dB boost or cut.
Mid	-15 to +15dB	Tone control for the mid frequencies, allowing a 15 dB boost or cut.
Hi	-15 to +15dB	Tone control for the high frequencies, allowing a 15 dB boost or cut.
Drive	0-100%	Governs the amount of overdrive.

Chopper2



Chopper2 is a combined tremolo and autopan effect. It can use different wave-forms to modulate the level (tremolo) or left-right stereo position (pan), either using Tempo Sync or manual modulation speed settings.

The parameters are as follows:

Parameter	Values	Description
Input	0-100%	Sets the Input level.
Output	0-100%	Sets the Output level.
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Chopper is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	When tempo sync is activated (the “Sync” button is lit) clicking the field above the Speed knob opens a pop-up menu, on which you select a note value for tempo-syncing the effect. Note that there is no note value modifier for this effect (see page 3).
Speed	0-50Hz	When tempo sync is activated (the “Sync” button is lit), this knob selects note values (the same as selecting from the pop-up menu). When tempo sync is deactivated (the “Sync” button is dark), this sets the tremolo/auto-pan speed freely.
Sync button	On/Off	Turns Tempo Sync on or off.
Stereo/Mono button	Stereo/Mono	Determines whether the Chopper will work as an auto-panner (button set to “Stereo”) or a tremolo effect (button set to “Mono”).
Waveform buttons	Sine, Square, Saw, reverse Saw, Triangle	Sets the modulation waveform.
Depth	0-100%	Sets the depth of the Chopper effect.

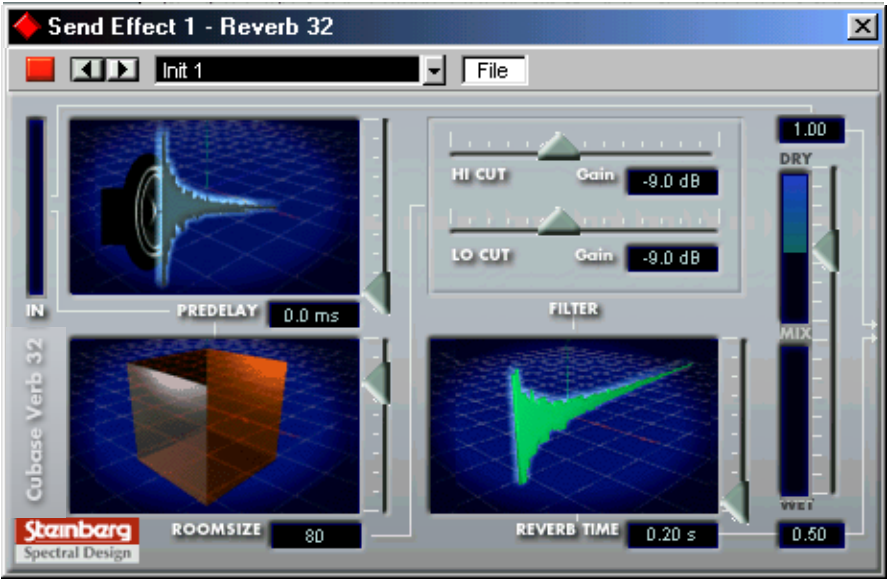
Reverb



Reverb is used to add ambience and “space” to recordings. The reverb effect features the following parameters:

Parameter	Values	Description
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Reverb is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Roomsize	0-100%	Governs the “size” of the simulated room environment.
Predelay	0-100%	This parameter sets a delay between the direct sound and the reverb effect output. A short predelay before the reverb reduces reverb “clutter” which blurs the sound, and makes the reverb effect more natural-sounding.
Reverb Time	0-100%	This parameter sets the length of the reverb effect.
Damp	0-100%	This parameter “dampens” the higher frequencies, producing a rounder and smoother sounding reverb.

Reverb 32 (Cubase VST/32 only)



Reverb 32 is a reverb plug-in which provides smooth, dense reverb effects. Reverb 32 has the following parameters:

Parameter	Values	Description
Mix	Dry/Wet	Sets the level balance between the dry signal and the effect (wet). If Reverb 32 is used as a send effect, this should be set to maximum wet, as you can instead control the dry/wet balance with the send.
Room Size	20-100	This setting determines the “size” of the simulated room environment.
Predelay	0-100ms	This parameter sets a delay between the direct sound and the reverb effect output. A short predelay before the reverb reduces reverb “clutter” which blurs the sound, and makes the reverb effect more natural-sounding.
Reverb Time	0,2s - Forever	This parameter sets the length of the reverb time.
Filter Hi Cut	-15 to 0dB	This filters out high frequencies for the reverb, which can make the reverb sound softer.
Filter Lo Cut	-15 to 0dB	This filters out the lower frequencies for the reverb. It can be used to reduce low frequency “rumble”.

Metalizer2



The Metalizer feeds the audio signal through a variable frequency filter, with Tempo sync or time modulation and feedback control.

Parameter	Values	Description
Output	0-100%	Sets the Output level.
Mix	0-100%	Sets the level balance between the dry signal and the effect. If Metalizer is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	When tempo sync is activated (the "Sync" button is lit) clicking the field above the Speed knob opens a pop-up menu, on which you select a note value for tempo-syncing the effect. There is no note value modifier for this effect (see page 3).
Speed	0-10Hz	When tempo sync is activated (the "Sync" button is lit), this knob selects note values (the same as selecting from the pop-up menu). When tempo sync is deactivated (the "Sync" button is dark), this sets the modulation speed freely.
On button	On/Off	Turns on and off the filter modulation. When turned off, the Metalizer will work as a static filter.
Sync button	On/Off	Turns tempo sync of the modulation on or off.
Stereo/Mono button	Stereo/Mono	Determines whether the output of the Metalizer will be in stereo or mono (see also the note on stereo effects on page 3).
Sharpness	0-100%	Governs the character of the filter effect. The higher the value, the narrower the affected frequency area, producing sharper sound and a more pronounced effect.
Tone	0-100%	Governs the feedback frequency. The effect of this will be more noticeable with high Feedback settings.
Feedback	0-100%	Sets the amount of feedback. Higher values produce a more "metallic" sound.

Tranceformer2



Tranceformer2 is a ring modulator effect, in which the incoming audio is ring modulated by an internal, variable frequency oscillator, producing new harmonics. A second oscillator can be used to modulate the frequency of the first oscillator, synchronized to the Song tempo if you wish.

Parameter	Values	Description
Input	0-100%	Sets the Input level.
Output	0-100%	Sets the Output level.
Mix	0-100%	Sets the level balance between the dry signal and the effect.
Pitch	1 - 5000Hz	Governs the frequency (pitch) of the modulating oscillator.
Tempo Sync pop-up	No sync, 1/1 to 1/32, 1/1 to 1/32 Triplet, 1/1 to 1/32 Dotted	When tempo sync is activated (the “Sync” button is lit) clicking the field above the Speed knob opens a pop-up menu, on which you select a note value for tempo-syncing the effect. There is no note value modifier for this effect (see page 3).
Speed	0-10Hz	When tempo sync is activated (the “Sync” button is lit), this knob selects note values (the same as selecting from the pop-up menu). When tempo sync is deactivated (the “Sync” button is dark), this sets the modulation speed freely.
On button	On/Off	Turns modulation of the Pitch parameter on or off.
Stereo/Mono button	Stereo/Mono	Governs whether the effect output will be stereo or mono.
Sync button	On/Off	Turns tempo sync of the modulation on or off.
Depth	0-100%	Governs the depth of the pitch modulation.
Waveform buttons	Sine, Square, Saw, reverse Saw, Triangle	Sets the pitch modulation waveform.

Karlette



The Karlette is a four-channel delay, that emulates a “tape-loop” echo. The four “tape-heads” can be set to a certain note value, or a certain time, depending on whether Tempo Sync is activated or not. For each of the four “tape-heads”, you can set the following parameters:

Parameter	Values	Description
Delay	1/32, 1/16, 1/16*, 1/8, 1/4T, 1/8*, 1/4, 1/2T, 1/4*, 1/2, 3/4, 1/1 Sync Off: 0 - 2 sec.	With the sync button activated, the delay can be set to a note value synced to the Cubase VST tempo. If the sync button is deactivated, the delay can be freely set to a time value.
Volume	Off to OdB	The amplitude of the delay. With the knob turned all the way to the left, the delay is muted.
Damp	0.000 to 1.000	The higher the value, the more the delay is dampened (the high frequencies are attenuated) to produce a more subtle effect.
Pan	L64/< C >/R64	Sets the stereo position for the delay.
Feedback	0.000 to 1.000	Sets the number of delay repeats.

In addition, the following global parameters are available:

Dry/Wet	0-100%	Sets the level balance between the dry signal and the effect. If Karlette is used as a send effect, this should be set to maximum as you can instead control the dry/effect balance with the send.
Sync	On/Off	Turns Tempo Sync on or off.

Grungelizer



The Grungelizer adds noise and static to your recordings. Kind of like listening to a radio with bad reception, or a worn and scratched vinyl record.

Parameter	Values	Description
Crackle	N-A	This adds crackle to create that old vinyl record sound. The farther to the right you turn the dial, the more crackle is added.
RPM switch	33-45-78	When emulating the sound of a vinyl record, this switch lets you set the RPM (revolutions per minute) speed of the record.
Noise	N-A	This dial regulates the amount of static noise added.
Distort	N-A	Use this dial to add distortion.
EQ	N-A	Turn this dial to the right to cut off the low frequencies, and create a more hollow, lo-fi sound.
AC	N-A	This emulates a constant, low hum of AC current.
Frequency switch	50-60 Hz	This sets the frequency of the AC current, and thus the pitch of the AC hum.
Timeline	Today - 1900	This dial regulates the amount of overall effect. The farther to the right (1900) you turn this dial, the more noticeable the effect.